```
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STRUCTURE FILE UPDATES:   31 OCT 2005  HIGHEST RN 866452-21-3
DICTIONARY FILE UPDATES:  31 OCT 2005  HIGHEST RN 866452-21-3

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*************************************************************************
*                                                                       *
* The CA roles and document type information have been removed from     *
* the IDE default display format and the ED field has been added,       *
* effective March 20, 2005.  A new display format, IDERL, is now        *
* available and contains the CA role and document type information.     *
*                                                                       *
*************************************************************************

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for details.

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=> fil hcap
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FILE COVERS 1907 - 1 Nov 2005  VOL 143 ISS 19
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FILE LAST UPDATED: 31 Oct 2005 (20051031/ED)

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```
=> d his

     (FILE 'HOME' ENTERED AT 14:12:59 ON 01 NOV 2005)

     FILE 'HCAPLUS' ENTERED AT 14:13:09 ON 01 NOV 2005
                E US20040033910/PN
L1            1 S E3
                SEL RN L1

     FILE 'REGISTRY' ENTERED AT 14:14:04 ON 01 NOV 2005
L2            8 S E1-8

     FILE 'HCAPLUS' ENTERED AT 14:16:12 ON 01 NOV 2005
L3            1 S L1 AND L2

     FILE 'REGISTRY' ENTERED AT 14:23:16 ON 01 NOV 2005
L4            1 S 653603-12-4/RN
L5              STR 653603-12-4
L6            0 S L5
L7              STR L5
L8            1 S L7
L9              STR L7
L10           2 S L9
L11          19 S L9 FUL
                SAV L11 COSTALES097/A

     FILE 'HCAPLUS' ENTERED AT 14:45:49 ON 01 NOV 2005
L12           5 S L11

     FILE 'STNGUIDE' ENTERED AT 14:48:03 ON 01 NOV 2005

     FILE 'HCAPLUS' ENTERED AT 14:48:44 ON 01 NOV 2005
L13           1 S L1 AND L12

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                SET COST OFF

     FILE 'REGISTRY' ENTERED AT 14:51:04 ON 01 NOV 2005

     FILE 'HCAPLUS' ENTERED AT 14:51:07 ON 01 NOV 2005

=> d l12 que stat
L9              STR
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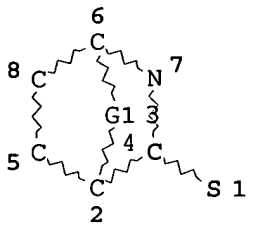


VAR G1=O/S/N/C
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 1
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

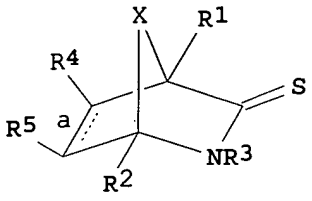
STEREO ATTRIBUTES: NONE
L11 19 SEA FILE=REGISTRY SSS FUL L9
L12 5 SEA FILE=HCAPLUS L11

=> d l12 bib abs hitstr ind 1-
YOU HAVE REQUESTED DATA FROM 5 ANSWERS - CONTINUE? Y/(N):y

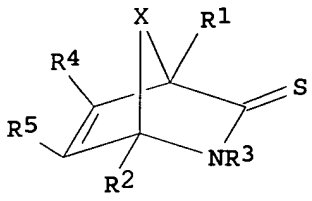
L12 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN ← Applicant
AN 2004:142784 HCAPLUS
DN 140:202191
TI Bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives
IN Mukkamala, Ravindranath
PA USA
SO U.S. Pat. Appl. Publ., 5 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004033910	A1	20040219	US 2003-636097	20030807
EP 1394240	A1	20040303	EP 2003-254694	20030728
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004162029	A2	20040610	JP 2003-287841	20030806

PRAI US 2002-401541P P 20020807
OS MARPAT 140:202191
GI



I

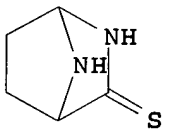


II

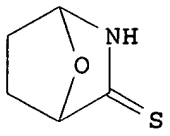
AB Non-metallic, phosphorus-free lubrication oil additives are of general structure I, in which X = -O-, -S-, -NR6-, or -CR7R8-; R1, R2, R4, R5, R7, and R8 are H, alkyl, alkenyl, aryl, or aralkyl, and; R3 and R6 are H, alkyl, alkenyl, aryl, aralkyl, alkanoyl, or aroyl. R3 is preferably C6-22-alkyl or -alkenyl, aryl, or aralkyl. Other addnl. compds. are of structure II (prepd. from I), in which R6 is B3, H, alkyl, alkenyl, aryl, aralkyl, alkanoyl, or aroyl; B1-3 are -CHR12-CHR13-CO2R14, -CR10R11-NHR9, -C(:O)NHR15, -C(:S)NHR15, or R16; R10, R11, and R14 are H, alkyl, alkenyl, aryl, or aralkyl; R16 is H or C1-4-alkyl; R9 and R15 are alkyl, alkenyl, aryl, or aralkyl. The additives, present at 0.1-20 wt.% in a lubricating oil, are substitutes for conventional zinc dialkyldithiophosphates.

IT **653603-12-4D**, 2,7-Diazabicyclo[2.2.1]heptane-3-thione, derivs. **653603-13-5D**, derivs. **653603-14-6D**, derivs. **653603-15-7D**, 2-Azabicyclo[2.2.1]heptane-3-thione, derivs. **653603-16-8D**, derivs. **653603-17-9D**, derivs. **653603-18-0D**, derivs. **653603-19-1D**, 2-Azabicyclo[2.2.1]hept-5-ene-3-thione, derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)

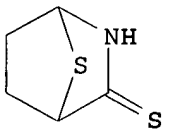
RN 653603-12-4 HCAPLUS
CN 2,7-Diazabicyclo[2.2.1]heptane-3-thione (9CI) (CA INDEX NAME)



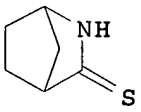
RN 653603-13-5 HCAPLUS
CN 7-Oxa-2-azabicyclo[2.2.1]heptane-3-thione (9CI) (CA INDEX NAME)



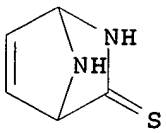
RN 653603-14-6 HCAPLUS
CN 7-Thia-2-azabicyclo[2.2.1]heptane-3-thione (9CI) (CA INDEX NAME)



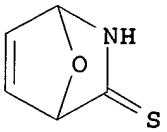
RN 653603-15-7 HCAPLUS
CN 2-Azabicyclo[2.2.1]heptane-3-thione (9CI) (CA INDEX NAME)



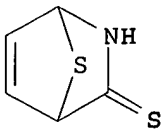
RN 653603-16-8 HCAPLUS
CN 2,7-Diazabicyclo[2.2.1]hept-5-ene-3-thione (9CI) (CA INDEX NAME)



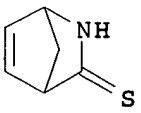
RN 653603-17-9 HCAPLUS
CN 7-Oxa-2-azabicyclo[2.2.1]hept-5-ene-3-thione (9CI) (CA INDEX NAME)



RN 653603-18-0 HCAPLUS
CN 7-Thia-2-azabicyclo[2.2.1]hept-5-ene-3-thione (9CI) (CA INDEX NAME)



RN 653603-19-1 HCAPLUS
CN 2-Azabicyclo[2.2.1]hept-5-ene-3-thione (9CI) (CA INDEX NAME)



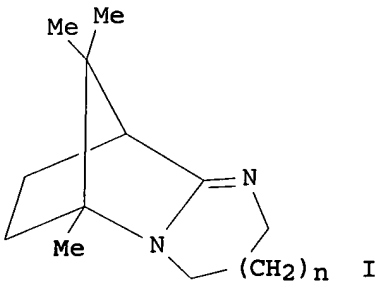
IC ICM C10M135-32
INCL 508221000; 508261000; 508242000; 546112000; 546114000; 546116000
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 24, 28
ST bicyclic thioamide lubricating oil additive; antiwear ashless lubricating oil additive bicyclic thioamide; zinc dithiophosphate substitute bicyclic thioamide lubricant additive
IT Lubricating oil additives
(antiwear; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(bicyclic, nitrogen, additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(bicyclic, oxygen, additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Heterocyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(bicyclic, sulfur, additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Thioamides
RL: MOA (Modifier or additive use); USES (Uses)
(bicyclic; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Bicyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(heterocyclic, nitrogen, additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Bicyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(heterocyclic, oxygen, additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)
IT Bicyclic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(heterocyclic, sulfur, additives; bicyclic thioamides as ashless,

phosphorus-free and metal-free lubricating oil additives)

IT Lubricating oil additives
(multifunctional; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)

IT **653603-12-4D**, 2,7-Diazabicyclo[2.2.1]heptane-3-thione, derivs. **653603-13-5D**, derivs. **653603-14-6D**, derivs. **653603-15-7D**, 2-Azabicyclo[2.2.1]heptane-3-thione, derivs. **653603-16-8D**, derivs. **653603-17-9D**, derivs. **653603-18-0D**, derivs. **653603-19-1D**, 2-Azabicyclo[2.2.1]hept-5-ene-3-thione, derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(additives; bicyclic thioamides as ashless, phosphorus-free and metal-free lubricating oil additives)

L12 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:799014 HCAPLUS
DN 134:115933
TI A novel synthesis of chiral DBU/DBN-related molecules for use in asymmetric base catalysis
AU Kotsuki, Hiyoshizo; Sugino, Atsushi; Sakai, Hiromitsu; Yasuoka, Hiroko
CS Laboratory of Natural Products Synthesis, Faculty of Science, Kochi University, Kochi, 780-8520, Japan
SO Heterocycles (2000), 53(11), 2561-2567
CODEN: HTCYAM; ISSN: 0385-5414
PB Japan Institute of Heterocyclic Chemistry
DT Journal
LA English
OS CASREACT 134:115933
GI



I

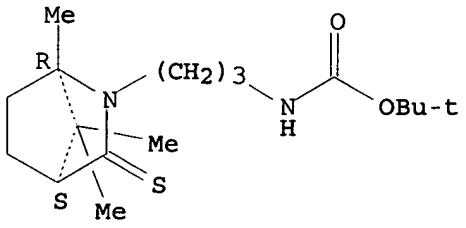
AB The sterically hindered chiral DBU/DBN-related mols. I [n = 1, 2] were prepd. from (+)-camphor lactam. The value of I as chiral org. base catalysts is exemplified by their use in asym. Michael addn. reactions of Me 1-oxo-2-indancarboxylate with MeCOCH:CH2.

IT **320573-80-6P 320573-81-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of chiral diazatricycloalkenes as catalysts for asym. Michael addns.)

RN 320573-80-6 HCAPLUS
CN Carbamic acid, [3-[(1R,4S)-1,7,7-trimethyl-3-thioxo-2-

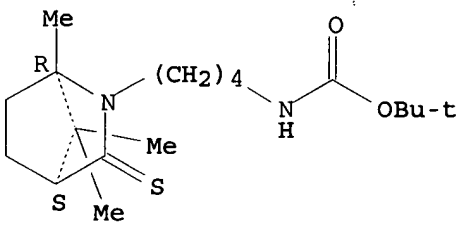
azabicyclo[2.2.1]hept-2-yl]propyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 320573-81-7 HCAPLUS
CN Carbamic acid, [4-[(1R,4S)-1,7,7-trimethyl-3-thioxo-2-azabicyclo[2.2.1]hept-2-yl]butyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

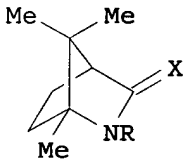
Absolute stereochemistry.



CC 28-21 (Heterocyclic Compounds (More Than One Hetero Atom))
ST diazatricycloalkene prepn chiral catalyst stereoselective Michael addn
IT Michael reaction
Michael reaction catalysts
(stereoselective; prepn. of chiral diazatricycloalkenes as catalysts for asym. Michael addns.)
IT 320573-82-8P 320573-83-9P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of chiral diazatricycloalkenes as catalysts for asym. Michael addns.)
IT 78-94-4, Methyl vinyl ketone, reactions 2162-33-6 22955-77-7 24326-89-4 51326-51-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of chiral diazatricycloalkenes as catalysts for asym. Michael addns.)
IT 105064-28-6P 320573-75-9P 320573-76-0P 320573-77-1P 320573-78-2P 320573-79-3P **320573-80-6P** **320573-81-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of chiral diazatricycloalkenes as catalysts for asym. Michael addns.)

IT 66152-63-4P 79298-08-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of chiral diazatricycloalkenes as catalysts for asym. Michael addns.)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:570954 HCAPLUS
DN 131:286165
TI Conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons
AU Polonski, Tadeusz; Milewska, Maria J.; Konitz, Antoni; Gdaniec, Maria
CS Department of Chemistry, Technical University, Gdansk, 80-952, Pol.
SO Tetrahedron: Asymmetry (1999), 10(13), 2591-2604
CODEN: TASYE3; ISSN: 0957-4166
PB Elsevier Science Ltd.
DT Journal
LA English
GI



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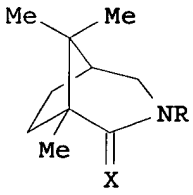

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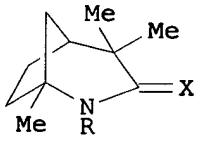


III

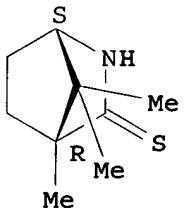
AB The CD spectra of several bicyclic lactams and thiolactams were measured in different solvents. The concn. dependence of the spectra obsd. in hydrocarbon solvents was attributed to shifts in the equil. between monomer and hydrogen-bonded dimer forms. The CD of some compds. is characterized by unusually strong Cotton effects resulting from non-planarity of the amide bonds due to internal strain of the bicyclic skeletons. The X-ray crystallog. structures of I(R,X given: H,O;H,S), II(R,X given: Me,O;Me,S) and III(R,X given: H,O;Me,O) showed different degrees of distortion of the amide or thioamide moieties from planarity, which causes inherent chirality of the chromophores and profoundly affects the Cotton effect sign and magnitude. This distortion also restricts application of the sector rules for prediction of the n-π^* CD

sign, since they can be used only for compds. with planar chromophores.

IT **246044-07-5P 246044-09-7P 246044-11-1P 246044-12-2P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons)

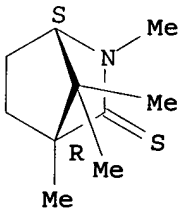
RN 246044-07-5 HCAPLUS
CN 2-Azabicyclo[2.2.1]heptane-3-thione, 4,7,7-trimethyl-, (1S,4R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



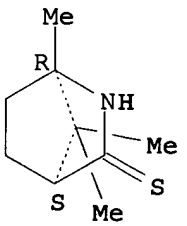
RN 246044-09-7 HCAPLUS
CN 2-Azabicyclo[2.2.1]heptane-3-thione, 2,4,7,7-tetramethyl-, (1S,4R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



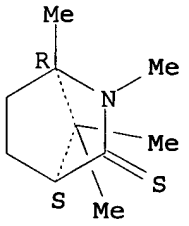
RN 246044-11-1 HCAPLUS
CN 2-Azabicyclo[2.2.1]heptane-3-thione, 1,7,7-trimethyl-, (1R,4S)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 246044-12-2 HCAPLUS
CN 2-Azabicyclo[2.2.1]heptane-3-thione, 1,2,7,7-tetramethyl-, (1R,4S)-
(9CI) (CA INDEX NAME)

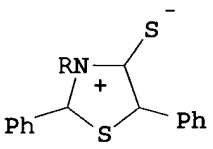
Absolute stereochemistry. Rotation (+).

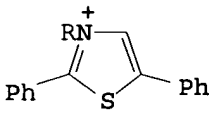


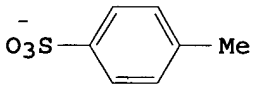
CC 22-11 (Physical Organic Chemistry)
Section cross-reference(s): 75
ST CD spectra bicyclic lactam thiolactam; crystallog bicyclic lactam thiolactam; conformation bicyclic lactam thiolactam
IT Circular dichroism
Conformation
Cotton effect
Crystal structure
Molecular structure
Strain energy
UV and visible spectra
(conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons)
IT Bicyclic compounds
Lactams
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons)
IT Dimers
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(hydrogen-bonded; conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons)
IT Lactams
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(thio-; conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons)
IT 24326-88-3P 24326-89-4P 107073-56-3P 107073-62-1P
107133-28-8P 246044-06-4P **246044-07-5P**
246044-09-7P 246044-10-0P **246044-11-1P**
246044-12-2P 246044-17-7P 246044-18-8P 246044-19-9P
246044-20-2P 246044-21-3P

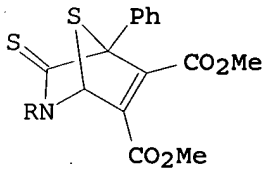
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conformational properties and chiroptical spectra of lactams and thiolactams with 2-azabicyclo[2.2.1]heptane, 2- and 3-azabicyclo[3.2.1]octane skeletons)
RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1985:184997 HCAPLUS
DN 102:184997
TI Studies on mesoionic compounds. XIV. Synthesis of mesoionic 1,3-thiazolium-4-thiolates
AU Takezawa, Katsushi; Nomura, Keiichi; Yoshii, Eiichi; Masuda, Katsutada
CS Fac. Pharm. Sci., Toyama Med. Pharm. Univ., Toyama, 930, Japan
SO Chemical & Pharmaceutical Bulletin (1984), 32(11), 4637-40
CODEN: CPBTAL; ISSN: 0009-2363
DT Journal
LA English
OS CASREACT 102:184997
GI



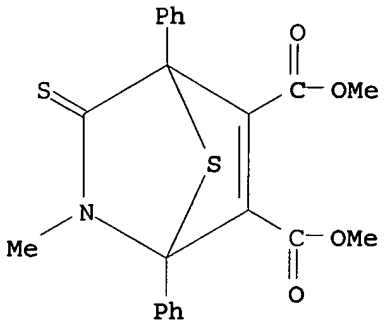
I




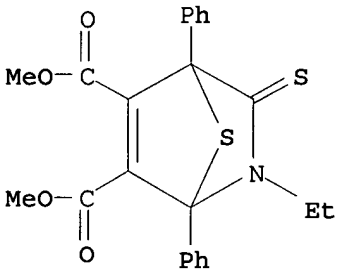
II


III

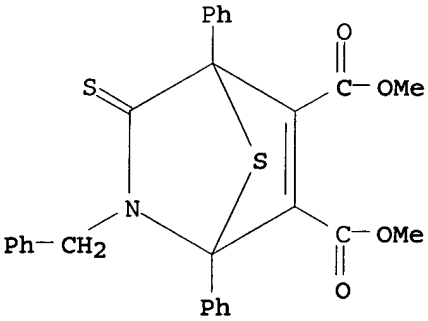
AB 3-Alkyl-2,5-diphenyl-1,3-thiazolium-4-thiolate I (R = Me, Et, CH2Ph) were prepd. by exchange of the exocyclic O of the mesoionic 4-olate with S via O-methylation or by base-catalyzed thiation of the N-alkyl-1,3-thiazolium compd II. I underwent cycloaddn. with MeO2CC.tplbond.CCO2Me to give thermally stable bicyclic compds. III.
IT **96207-20-4P 96207-21-5P 96207-22-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 96207-20-4 HCAPLUS
CN 7-Thia-2-azabicyclo[2.2.1]hept-5-ene-5,6-dicarboxylic acid, 2-methyl-1,4-diphenyl-3-thioxo-, dimethyl ester (9CI) (CA INDEX NAME)



RN 96207-21-5 HCAPLUS
CN 7-Thia-2-azabicyclo[2.2.1]hept-5-ene-5,6-dicarboxylic acid, 2-ethyl-1,4-diphenyl-3-thioxo-, dimethyl ester (9CI) (CA INDEX NAME)



RN 96207-22-6 HCAPLUS
CN 7-Thia-2-azabicyclo[2.2.1]hept-5-ene-5,6-dicarboxylic acid, 1,4-diphenyl-2-(phenylmethyl)-3-thioxo-, dimethyl ester (9CI) (CA INDEX NAME)



CC 28-7 (Heterocyclic Compounds (More Than One Hetero Atom))
ST thiazoliumthiolate prepn cycloaddn acetylenedicarboxylate; thiaazabicycloheptenethone; mesoionic thiazoliumthiolate
IT Meso-ionic compounds
RL: SPN (Synthetic preparation); PREP (Preparation)

(thiazolium thiolates, prepn. and cycloaddn. of, with acetylenedicarboxylate)
IT 96207-11-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and methylation of)
IT 96207-17-9P 96207-18-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with acetylenedicarboxylate)
IT 56922-47-5P 96207-16-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with sulfur)
IT 96207-12-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, with trimethyloxonium tetrafluoroborate)
IT 96207-14-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and thiolation of)
IT 96207-19-1P **96207-20-4P 96207-21-5P**
96207-22-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 80-48-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with 2,5-diphenylthiazole)
IT 3704-40-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alkyl p-toluenesulfonates)
IT 762-42-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alkyldiphenylthiazolium thiolates)
IT 5310-14-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with bromophenylacetic acid)
IT 80-40-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with diphenylthiazole)
IT 4870-65-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with methylthiobenzamide)

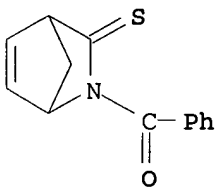
L12 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1966:420707 HCAPLUS
DN 65:20707
OREF 65:3826e-f
TI Diels-Alder synthesis with acetyl and benzoyl isothiocyanates
AU Arbuzov, B. A.; Zobova, N. N.
CS State Univ., Kazan
SO Doklady Akademii Nauk SSSR (1966), 167(4), 815-18
CODEN: DANKAS; ISSN: 0002-3264
DT Journal
LA Russian

AB Keeping benzoyl isothiocyanate with 1 mole butadiene in a sealed tube 6-7 months gave after treatment with dry Et2O 45.3% N-benzoyl-2-thiono-1,2,3,6-tetrahydropyridine, m. 97-8°; acetyl isothiocyanate gave the N-acetyl analog, 40.7%, m. 78-80°. Reaction with isoprene performed in the presence of hydroquinone gave, resp., 44.5% 4(or 5)-methyl-N-benzoyl-2-thiono-1,2,3,6-tetrahydropyridine, m. 99-101°, and 39.2% 4(or 5-)-methyl-N-acetyl-2-thiono-1,2,3,6-tetrahydropyridine, m. 82-3°. Similar reaction with 2,3-dimethyl-1,3-butadiene gave 46% 4,5-dimethyl-N-benzoyl-2-thiono-1,2,3,6-tetrahydropyridine, m. 146°, and 42.5% 4,5-dimethyl-N-acetyl-2-thiono-1,2,3,6-tetrahydropyridine, m. 93.5-5°. Cyclopentadiene gave 50.6% N-benzoyl-3-thiono-2-azabicyclo[2.2.1]-5-heptene, m. 125.5-26°, and 49.8% N-acetyl analog, m. 91-2°. Ir spectra are reported.

IT **6431-29-4**, 2-Azabicyclo[2.2.1]hept-5-ene-3-thione, 2-benzoyl- **6431-30-7**, 2-Azabicyclo[2.2.1]hept-5-ene-3-thione, 2-acetyl-
(prepn. and spectrum of)

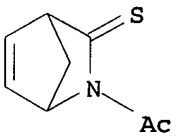
RN 6431-29-4 HCAPLUS

CN 2-Azabicyclo[2.2.1]hept-5-ene-3-thione, 2-benzoyl- (7CI, 8CI) (CA INDEX NAME)



RN 6431-30-7 HCAPLUS

CN 2-Azabicyclo[2.2.1]hept-5-ene-3-thione, 2-acetyl- (7CI, 8CI) (CA INDEX NAME)



CC 37 (Heterocyclic Compounds (One Hetero Atom))

IT Spectra, infrared
(of Diels-Alder adducts with acetyl and benzoyl isothiocyanates)

IT Diels-Alder reaction
(of acetic acid anhydride with isothiocyanic acid or benzoic acid anhydride with isothiocyanic acid)

IT Acetic acid, anhydride with isothiocyanic acid
(Diels-Alder reaction with)

IT 532-55-8, Benzoic acid, anhydride with isothiocyanic acid
(Diels-Alder reaction with)

IT 6431-24-9, 2(1H)-Pyridinethione, 1-benzoyl-3,6-dihydro- 6431-25-0,

2(1H)-Pyridinethione, 1-acetyl-3,6-dihydro- 6431-26-1,
2(1H)-Pyridinethione, 1-benzoyl-3,6-dihydro-4-methyl-(?)
6431-27-2, 2(1H)-Pyridinethione, 1-benzoyl-3,6-dihydro-4,5-dimethyl-
6431-28-3, 2(1H)-Pyridinethione, 1-acetyl-3,6-dihydro-4,5-dimethyl-
6431-29-4, 2-Azabicyclo[2.2.1]hept-5-ene-3-thione,
2-benzoyl- **6431-30-7**, 2-Azabicyclo[2.2.1]hept-5-ene-3-
thione, 2-acetyl- 6545-84-2, 2(1H)-Pyridinethione,
1-acetyl-3,6-dihydro-4-methyl-(?) 13250-44-7, 2(1H)-
Pyridinethione, 1-benzoyl-3,6-dihydro-5-methyl-(?) 13250-45-8,
2(1H)-Pyridinethione, 1-acetyl-3,6-dihydro-5-methyl-(?)
(prepn. and spectrum of)

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